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MEMORANDUM

REFER		NOTED	
TO	DATE	BY	DATE
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TO: Herbert A. Tessler, Supervisor, Planning Division
FROM: Irv Soffer
DATE: October 11, 1965
SUBJECT: WORLD TRADE CENTER - TOWERS - EXTERIOR WALLS - U. S. STEEL CO. TEST

REFERENCE:

COPY TO: Messrs. Feld, Monti, Panero, Levy

On October 5, 1965, the U. S. Steel Company held a demonstration at the E. B. Carley Company in Long Island City, New York. The test was performed to show one of the methods for spray fireproofing the exterior columns, with the exterior cover in place.

This test had been tried previously, see memo from Irv Soffer to H. Tessler dated July 27, 1965.

The nozzle was modified and some of the problems overcome by improving the spray characteristics. However, there is still the problem of the blind corners around the exterior face of the columns, with accompanying voids, even with clear plexiglass used in the test.

I feel that this test was unsatisfactory from the material standpoint. The material used was "Limpet", which is a mineral wool-asbestos spray-on. This material is difficult to apply because of its dust and over-spray characteristics; and after installation and curing the material becomes dry and crumbly.

My recommendation is that the exterior column fireproofing should be a cementitious type, with a very hard dry density residue. After discussing the results of this test with Mr. La Vorene, of the U. S. Steel Co., he agreed to perform another test on the column mock-up, using a cementitious spray-on similiar to "Mono-Kote". A cementitious material will require less than 2" of thickness to obtain a 4 hour rating.

Attached are photos taken at the test in Long Island City.

The effect on the present column configuration is as follows:

Width of steel columns	12" x 1	=	12"
Thickness of column F.P. each side	2" x 2	=	4"
Vertical erection clearance each side	7/8" x 2	=	1 3/4"
Total Width of Column Cover		=	17 3/4"

<u>If width of steel column is increased by one inch:</u>

Width of steel column	13" x 1	=	13"
Thickness of column F.P. each side	2" x 2	=	4"
*Vertical erection clearance each side	3/8" x 2	=	3/4"

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* This could or could not be problematical depending on what F.P. material is finally specified. At this time, the four-hour rating will require a 2" thickness of spray-on. However, this week "Vonco" is being tested at the Underwriter's Laboratory in Chicago. They are shooting for a 1½" thick spray-on application to obtain a four hour rating.

Irv Soffer

IS:dd